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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/741,491	12/19/2003	Dennis S. Greywall	Greywall 30-8	4102
22186	7590	10/05/2004	EXAMINER	
MENDELSON AND ASSOCIATES PC 1515 MARKET STREET SUITE 715 PHILADELPHIA, PA 19102			CHOI, WILLIAM C	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/741,491	GREYWALL ET AL.
	Examiner	Art Unit
	William C. Choi	2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 24,25 and 27 is/are allowed.
- 6) Claim(s) 1,9,10,14-16,19 and 20 is/are rejected.
- 7) Claim(s) 2-8,11-13,17,18,21-23 and 26 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 19 December 2003 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1203</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

Receipt of the Information Disclosure Statement (IDS) with the copies of the references cited therein was received on December 19, 2003. An initialized copy of the IDS is enclosed with this office action.

### ***Claim Objections***

Claim 26 is objected to because of the following informalities: in line 4, the second occurrence of "plate" should be changed to "substrate". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9, 10, 14-16, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ford et al (U.S. 6,178,033 B1).

In regard to claims 1 and 16, Ford et al discloses a MEMS device (Figure 3), comprising: a deformable plate (column 4, lines 21-23, Figure 3, "33"); and a first actuator mounted on the deformable plate and adapted to apply a deformation force to

the deformable plate to change the shape of the plate (column 4, lines 51-63, Figure 3, "37").

Regarding claims 9 and 19, Ford et al discloses wherein the plate is movably connected to a substrate (column 4, lines 51-63).

Regarding claims 10 and 20, Ford et al discloses wherein the plate moves with respect to the substrate, the first actuator moves together with the plate (column 4, lines 51-63, Figure 2B, "26A").

Regarding claim 14, Ford et al discloses wherein the plate has a reflective surface (column 4, lines 34-38, Figure 3, "35").

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ford et al.

Regarding claim 15, Ford et al discloses as set forth above, but does not specifically disclose wherein the device is part of a dispersion compensator. Examiner takes official notice that it is well known in the art for deformable plate MEMS devices to be used in dispersion compensators. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, for the MEMS device of Ford

et al to be used in a dispersion compensator since it is well known in the art for deformable plate MEMS devices to be used in dispersion compensators

***Allowable Subject Matter***

Claims 24-27 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 24 and 25: a MEMS device comprising a deformation actuator mounted on a deformable plate connected to a substrate as claimed, specifically wherein, when the plate adopts a shape and moves with respect to the substrate without a change of the adopted shape, the actuator moves together with the plate without a change in the deformation force applied to the plate by said deformation actuator.

The prior art fails to teach a combination of all the claimed features as presented in claim 27: a MEMS device comprising a deformable plate rotatably supported on a substrate and an actuator adapted for deforming said plate as claimed, specifically further wherein deformation of said plate is independent of any rotation of said plate.

Claims 2-8, 11-13, 17, 18 and 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 2 and 17: a MEMS devices and deformation method as claimed, specifically

wherein, when a voltage differential is applied between the first and second electrodes, the electrodes move with respect to each other thereby generating the deformation force.

The prior art fails to teach a combination of all the claimed features as presented in claims 3-8 and 18: a MEMS devices and deformation method as claimed, specifically wherein the first end of the first electrode and the second electrode are attached to the plate, the second end of the first electrode is movable with respect to the second electrode and wherein when a voltage differential is applied between the first and second electrodes, the second end moves with respect to the second electrode thereby applying the deformation force to the plate.

The prior art fails to teach a combination of all the claimed features as presented in claims 11-13 and 21-23: a MEMS devices and deformation method as claimed, specifically further comprising a second actuator adapted to move the plate with respect to the substrate

Claim 26 would be allowable if rewritten or amended to overcome the objection, set forth in this Office action.

The prior art fails to teach a combination of all the claimed features as presented in claim 26: a MEMS device comprising means for moving a deformable plate with respect to a substrate and means for deforming the plate as claimed, specifically wherein, when the plate adopts a shape and moves with respect to the substrate without a change of the adopted shape, the means for deforming the plate moves

together with the plate without a change in a deformation force applied to the plate by said deforming means.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (571) 272-2324. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2873

W.C.

William Choi  
Patent Examiner  
Art Unit 2873  
October 1, 2004



Georgia Epps  
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